

lateral, and much broader than long. Upper parts and tail brownish, lower white.

Total length 13 inches, the tail measuring 1 inch.

*Typhlops eschrichtii* (Schleg.).

*Ahetulla irregularis* (Leach).

*Ahetulla dorsalis* (Bocage).

*Leptodira rufescens* (Gm.).

#### INSECTA.

*Gymnopleurus aruginosus* (Harold).

*Charaxes*, sp. Larva.

*Phymateus squarrosus*.

*Acridium tartaricum*.

*Phasma*, sp.

*Platypheura cameronii*, sp. n. (Butler).

*Occeticus*, sp. Pupa-cases.

The new species of Cicada has been named by Mr. A. G. Butler, who has drawn up the following description:—

#### PLATYPHEURA CAMERONI, sp. n.

Purplish brown; thorax ferruginous behind, the impressions clothed with ochraceous tomentum; scutellum and abdomen blackish; costal margin of tegmina ochraceous; basal three fifths of the tegmina purplish brown, spotted with olive-brown; an oval spot in the centre of the subcostal cell; outline of brown coriaceous area sharply defined and regularly crenulated; remaining area hyaline white; three subapical large brown spots, and a submarginal series connected by a zigzag line; wings deep mahogany-brown, blackish externally, the veins paler; nerveless border hyaline white. Length 15 lines, expanse of tegmina 4 inches 6 lines.

Allied to *P. limbata* and *P. stalina*, but with the head more acuminate in front, the coloration much deeper, and the markings differently disposed and better-defined.

12. Description of a young Specimen of the *Delphinus albirostris*. By D. J. CUNNINGHAM, M.B., Demonstrator of Anatomy, University of Edinburgh. Communicated by Prof. Flower, F.R.S., V.P.Z.S., &c.

[Received June 14, 1876.]

(Plate LXIV. fig. 1.)

In September last I purchased from one of the Edinburgh fish-mongers a female Dolphin, caught off Great Grimsby, which possesses characters worthy of special description.

<i>Measurements.</i> —		ft.	in.
Total length in a straight line, from the point of the lower jaw to the chink of the tail . . . . .		4	2
From the point of the snout to the base of the dorsal fin, following the curve of the head and back . . . . .		2	1½
From the anterior part of the dorsal fin to the extremity of the tail, following the curve of the back . . . . .		2	5
Girth immediately behind the flippers . . . . .		2	4
"    "    in front of dorsal fin . . . . .		2	8
From the point of snout to the anterior commissure of the eyelids . . . . .		0	8
From point of snout to anterior border of the root of flipper . . . . .		0	11½
From the point of the snout to the blow-hole . . . . .		0	8¼
From the point of snout to angle of mouth . . . . .		0	6
From point of lower jaw to angle of mouth . . . . .		0	6½
Anterior border of flipper . . . . .		1	0
Posterior border of flipper . . . . .		0	8
Girth of flipper at its root . . . . .		0	9
"    "    in middle . . . . .		0	8
Extreme breadth of tail from side to side . . . . .		1	1½
"    "    from before backwards . . . . .		0	5
Base of dorsal fin . . . . .		0	10
Height at highest point . . . . .		0	6½
From umbilicus to anterior commissure of the labia majora . . . . .		0	9

A vertical line drawn so as to divide the animal into two equal parts passed through the dorsal fin, dividing it unequally, 2 inches of its base lying in front of the line and 8 inches behind it.

*Integument.*—In the dorsal region the integument was of a uniform black colour, which was continued back over the dorsal fin and upper surface of the tail, and forwards over the forehead. At a short distance from the mouth this colour stopped abruptly with a sharp outline, giving place over the snout to a creamy yellow colour, this patch being deepest in front (2 inches), and gradually narrowing towards the angles of the mouth on each side, near which it ended. In front, in the middle line, a process of creamy yellow, about the breadth of the point of the little finger, and about ½ an inch long, passed upwards from the white of the snout into the forehead. The skin of the mandible, throat, and belly was creamy white. The flippers were jet-black, and the tail on its under surface was of a blackish slate-colour.

The black colour of the dorsum was not continued uniformly over the sides; but was interrupted by three white patches. Moreover the tint of black on the sides was not so deep as that over the back, being more slate-coloured. Of the white patches, one of large size (10 in. by 6 in.) was situated upon the neck, in front and above the level of the flipper. It was irregular in its outline, more or less completely divided into an upper and a lower portion by a stripe of slate-colour, and interrupted here and there by sharply defined deep-black lines and spots of small size. A slender bar of slate-colour,

passing from the angle of the mouth to the root of the flipper, separated this patch from the white of the throat. The second white patch was much smaller in its area (7 in. by  $2\frac{1}{2}$  in.) and not so bright in colour. It was placed at a higher level than the first, and behind it. The third patch was very large (14 in. by 4 in.), and oblong or elliptical in shape. It was placed behind the middle vertical line, and was uniform over its greater part; but as the black shaded into the white, the uniformity of the latter was broken by numerous black or dark grey streaks. It was separated from the white of the belly by a narrow but decided slate-coloured band.

*Head.*—The curve from the neck was uniform, but at the same time decided; and this gave the head a massive appearance. The jaws were wedge-shaped; and the lower lip projected half an inch further forwards than the upper. Traversing the white snout was a well-marked furrow or groove, which commenced at the oral fissure close to the angle of the mouth, and passed round the snout to a corresponding point on the opposite side. Its depth was greater laterally than in front; and it served to give the animal a peculiar beaked appearance. From each side of the white snout, about 1 inch above the fissure of the mouth and immediately below the furrow, *four* strong black bristles projected. They were placed in a straight line and were a  $\frac{1}{4}$  of an inch apart from each other.

The blow-hole was situated almost in a straight line above the eye. It had the ordinary semilunar form, and was 1 inch in breadth. The eye was protected by well marked eyelids, the fissure between which was about  $\frac{1}{2}$  inch long. Surrounding the eye the integument had a deeper black tint; and about an inch from it, it was surrounded by a faintly marked circle or ridge. The auditory aperture could not be detected.

*Dentition.*—In the upper jaw there were twenty-four teeth upon each side. Those in the centre of the range were the largest, and the anterior were smaller than the posterior. They commenced about  $\frac{1}{4}$  of an inch from the middle line; and the first three on each side were not visible above the mucous membrane of the gum, but could be readily felt. Those of the lower jaw were twenty-six in number on each side. The first tooth was placed about  $\frac{1}{2}$  an inch behind the middle line, and, with the succeeding three, was completely covered by mucous membrane. When the mouth was closed the teeth of the two jaws interlocked; but the two anterior teeth of the lower jaw had no opposing teeth in the upper jaw. They were conical in shape, sharp and curved, the concavity being towards the tongue. They were freely movable, the greatest range of movement being outwards.

*General contour of body.*—This is well seen in the accompanying figure (Plate LXIV, fig. 1); and it will be noticed that, instead of tapering uniformly from behind the dorsal fin to the tail, the body suddenly expands in a vertical direction and then narrows into the part from which the tail springs. This gives a sort of humped appearance to this portion of the animal; and the hump suggests the idea of a rudimentary dorsal fin. That it is so in reality is rendered

very probable by the fact that in structure it is exactly similar to the dorsal fin. It is composed of the same dense, almost glistening fibrous tissue, in the meshes of which is very little oil.

The dorsal fin had a falciform posterior border; and its base was prolonged for a short distance towards the tail by a well-marked ridge. The flipper had a very characteristic appearance. The anterior and longest margin presented a uniform convex curve from the root to the tip. The posterior border was slightly concave from the tip to about the middle; here it suddenly bulged out into a convexity which extended to the root.

*Vertebral column.*—The vertebræ were 90 in number—7 cervical, 15 dorsal, and 68 lumbo-caudal. The atlas and axis were fused together, so as to constitute one bone, the double nature of which, however, was indicated behind by two fissures, one on each side, which partially separated the laminae, and in front by a partial plate of cartilage intervening between the bodies. The other five cervical vertebræ were free. The transverse processes were flat, directed somewhat forwards and imbricated.

Such being the distinctive characters of this Dolphin, we must now proceed to determine the species to which it belongs.

It presents points of similarity both to *D. albirostris* and to *D. acutus* or *leucopleurus*.

*D. albirostris* was first figured and described by Brightwell in 1846, under the name of *D. tursio* (Fabr.), in the 'Annals and Magazine of Natural History' (vol. xvii.); but Dr. J. E. Gray, recognizing this error of nomenclature, pointed out that it was a new species, and gave it the specific name of *albirostris*. The specimen described by Brightwell was a female caught off Yarmouth, and it measured 8 feet 2 inches in length. The following is Brightwell's description:—"The colour of the upper part and sides a very rich deep purple-black. The external cuticle was of a soft and silky texture, and so thin and delicate that it was easily rubbed off. The nose and a well-defined line along the upper jaw, and the whole of the lower jaw and belly, were of a cream-colour, varied in some parts by a chalky-coloured white, contrasting beautifully with the rich black of the body. The fins and tail were of the same colour as the back." Gray\*, Lilljeborg†, and Bell‡, all follow this description; and it may therefore be considered the source from which they have drawn their information; moreover Gray and Bell have reproduced the figure, the former on a larger and the latter on a smaller scale. The drawing represents an animal of an entirely different mould from the Dolphin I have described. The head has not the same massive appearance, but is characterized by the great prolongation forwards of the jaws; whilst, behind the dorsal fin, the body tapers sharply and uniformly towards the caudal expansion, showing nothing of the hump or rudimentary dorsal fin which constituted

\* Gray, Cat. of Seals & Whales, 1866; Synopsis of Whales & Dolphins in Brit. Mus 1868.

† Lilljeborg, Mem. on Cetacea, Ray Soc. 1866.

‡ Bell, British Quadrupeds (2nd edition), 1874.

such a prominent feature in the Great-Grimsby specimen. Again, the sides are deep black over their whole extent; and if we divide the animal represented in Brightwell's figure into two equal parts by a middle vertical line, we find that the anterior border of the dorsal fin lies  $\frac{1}{2}$  an inch behind this line, which in the specimen itself would represent a distance of 7 inches\*. In the Great-Grimsby Dolphin the middle vertical line passed through the dorsal fin, dividing it unequally, 2 inches lying in front and 8 inches behind it.

Indeed, with the exception of the white snout, the figure of this animal given by Brightwell, and reproduced by Gray and Bell, presents not a single feature in common with the Great-Grimsby Dolphin.

At first, not fully recognizing the fact that the authors I have mentioned in connexion with this species had borrowed their details from Brightwell, the original describer, and that any inaccuracy on the part of the latter would consequently be reproduced by the others, I was induced to consider the Great-Grimsby specimen a new species, and this in the face of many essential points of similarity between the skeletal peculiarities of it and *D. albirostris*. I have been deterred from doing this by my attention being redirected by Prof. Flower to another and independent account of this species by Prof. Van Beneden†. This memoir I had at first been inclined to regard as of small value, so far as my wants were concerned, seeing that it differed so greatly in its facts from the writings of the authors I have mentioned, and in whom, at the time, I was placing implicit trust, and also owing to a certain discrepancy which existed between Van Beneden's description and his accompanying figure, which made me doubtful as to the accuracy of the whole. But a more careful study of it, and looking at the plate more as a guide to the general outline of the body than as a representation of the markings, I was able to establish certain features in common between it and the specimen I have described; moreover my faith in Brightwell's description and figure has been much shaken.

The drawing given by Van Beneden shows an animal somewhat blunter about the head than that represented by Brightwell, and with a slight approach to the hump close to the tail; but then the lower lip does not project beyond the upper, and the dorsal fin lies altogether in front of the middle vertical line, which corresponds to its posterior margin. The markings are also peculiar and do not in every respect agree with the accompanying letterpress description.

\* The animal measured 8 feet, whilst in the drawing it occupies a space of 7 inches;  $\frac{1}{2}$  an inch in the latter therefore would be equal to 7 inches in the specimen itself. But this does not agree with the accompanying letterpress, in which it is stated that from the tip of the nose to the dorsal fin the animal measured 3 feet 5 inches, and that the base of this fin was  $11\frac{1}{2}$  inches long. According to these measurements, therefore, 8 inches of the fin must have been in front of, and 3 inches behind the middle vertical line. In reproducing the drawing Gray must have noticed this inaccuracy and adopted a middle course; for in his figure the dorsal fin lies immediately behind the middle vertical line; and this is the only respect in which his plate differs from Brightwell's.

† Van Beneden, "Recherches sur les Cétacés," Nouv. Mém. de l'Acad. R. de Bruxelles, t. xxxii. 1862.

The white of the snout passes up so as to encircle the eye; a faintly marked streak passes in a horizontal direction from above the eye along the flank, and ends in front of the dorsal fin, whilst the body behind the dorsal fin appears to be white.

Van Beneden's own description of the Dolphin, which is framed from an examination of two female specimens caught by the fishermen of Ostend, one of which measured 7 feet in length, is as follows:—  
 "The head is prolonged into a sort of beak. From the base of the beak, the head, the back, all the dorsal fin, the base of the tail and upon the side, to the middle of the flanks, the skin is of a beautiful black; also the caudal fin and a great part of the pectoral fin. The beak, or that part of the snout which rises abruptly, is of a yellowish white. The entire lower surface of the body is of a shining white. But what, in the markings, seems to characterize this species best, independently of the pale colour of the beak, is a white band which stretches upon the sides parallel to the vertebral column, commencing above the eyes and becoming lost, below the anterior border of the dorsal fin, in the white colour of the abdomen. It follows from this that the body is white below, upon the side of the abdomen and tail, and that an equally white band is present upon the side of the back." Then in the following page he states that "the lower jaw projects almost an inch beyond the upper."

But this description does not agree with the plate which accompanies it. As I have mentioned, the latter represents an animal in which the whole posterior part of the body is of a light colour, and in which the jaws are of equal length\*, whilst in the letter-press (p. 28) we find it clearly stated that "the back, dorsal fin, and caudal fin are of a beautiful black," and that the lower jaw projects an inch beyond the upper. The author makes no reference to the position of the dorsal fin; and we are therefore left to infer its situation from the drawing.

The memoir also contains an elaborate account of the skeletal peculiarities of this species. The vertebræ are from 90 to 94 in number; and the atlas and axis are ankylosed, whilst the other five cervical vertebræ are free and possess thin overlapping transverse processes.

He states that in both specimens the dentition was  $\frac{25}{25}$ ; Lilljeborg quotes it as  $\frac{26}{27}$ , Gray as  $\frac{25}{24}$ , and Brightwell as  $\frac{24}{23}$ .

Now as it appears to me that Van Beneden's account of *D. albirostris* is the most reliable, I purpose making it the standard with which to compare the Great-Grimbsby Dolphin, in order to determine whether or not it belongs to this species. But in making this comparison, it must be borne in mind that the semicartilaginous state of some of its bones, the characters of the skull, and the bristles on the snout, all contributed to show that the Great-Grimbsby specimen had not nearly reached adult life.

\* I do not refer to the drawing of the skull, which he also gives. This shows a greater length of the inferior than the superior jaw.

The characters of the skeleton are almost identical in both. Thus the present specimen agrees with *D. albirostris* in the number of the vertebræ and in the peculiarities of the cervical vertebræ. There are, indeed, a few points of difference to be detected in the skull; but these are of minor importance and probably merely the differences of youth and age.

The differences of import are to be found (1) in the character of the markings, (2) in the general shape of the body, (3) in the position of the dorsal fin. I consider, however, that the extreme youth of the specimen may account for the first two of these dissimilarities. The discrepancy in the markings is not great, and consists chiefly in the white patches on the side being more strongly pronounced and more distinctly separated by the black. Then as regards the difference of shape, we know that a massive head, or a head large in proportion to the rest of the body, is a peculiarity of youth in many animals. The position of the dorsal fin in relation to the middle vertical line, however, is a difficulty not so easily got over; we can scarcely suppose that as the Dolphin advances in age, the dorsal fin advances upon the back, at least to such an extent as to lie entirely in front of the middle vertical line. But the drawing of Van Beneden is the only guarantee that we have of its position in front of this vertical line; and as we have already seen this to be in fault in one or two particulars, it is not improbable that it is in error in this respect also.

I believe, therefore, that I am justified in regarding the Great-Grimsby Dolphin as a young specimen of the *D. albirostris* as described by Van Beneden.

An interesting feature in the case, however, is the striking resemblance in external characters which this Dolphin presents to the *D. acutus* of Gray\*. In both there is the same general outline of body, massive head, and humped appearance close to the tail; and in both the sides are piebald, the markings, however, differing in character. Here the similarity ceases; and in skeletal peculiarities they diverge widely from each other. The *D. acutus* has 80 or 82 vertebræ; and in the cervical region the first four are ankylosed together, the first three completely, the fourth simply by its spinous process. In the Great-Grimsby specimen, as we have seen, the vertebræ numbered 90, and in the cervical region the atlas and axis alone were fused together. These characteristics, in conjunction with the white snout, are sufficient to show that the Dolphin I have described could not be considered referable to *D. acutus*.

It will not be inappropriate to conclude this communication with a brief summary of the various localities in which the recorded specimens of *D. albirostris* have been captured; and in this way an idea of the geographical distribution of the species may be obtained.

*D. albirostris* is a native of the North Sea, but is also found in

\* Gray, Spicil. Zool. 1828; Rasch, Nova Species Descripta cum tabulis ii. 1843; Duguid, Ann. and Mag. Nat. Hist. vol. xix. 1864; Schlegel, Abhandl. Zool. &c. 1841, tab. i. & ii. fig. 4, tab. iv. fig. 5.

the Baltic. Eschricht states that it appears regularly in Davis's Straits in the wake of migratory fish, at the time when the Beluga and Narwhal leave their winter quarters for the Polar regions.

The following table shows the localities in which it has been caught.

*Coast of England.*

South Coast .....	A male in 1871. Its anatomy was described by Dr. Murie (Proc. Lin. Soc. 1871). Skeleton in Brit Mus.	
Coast of Norfolk. {	Yarmouth .....	A female (described and figured by Brightwell Ann. and Mag. Nat Hist. vol. xvii. 1846). Skull in Brit. Mus.
	Cromer .....	Specimen shot by Mr. Upeher (Ann. & Mag. Nat. Hist. vol. xviii. 1866). Skull in British Museum.
	Lowestoft .....	Specimen captured a few weeks ago. In the possession of Mr. J. W. Clark of Cambridge.
Great Grimsby .....	Young female, now described. Skeleton in Edin. Univ. Museum.	
Hartlepool.....	First recorded specimen, 1834. Skull in Cambridge Museum.	

*Coast of Belgium, Denmark, Norway, and Sweden.*

Østend .....	Two females, described by Van Beneden (Nouv. Mém. de l'Acad. Brux. t. xxxii. 1861).
Kiel .....	Two specimens, one of which furnished to M. Claudius the subject of his memoir entitled "Dissert. de Lagenorhynchis" (Kilia 1853).
Bergen .....	One specimen. Skull in Museum there.
Gullholmen .....	Two pregnant females. Skeleton of one preserved by F. A. Smith, Acad. Docent, and now in the Museum of the Univ. of Upsala.
Skånör .....	One stranded. Lower jaw in the Zoological Museum of the University of Lund.

Specimens have also been seen off the Färoe Islands.

In conclusion my best thanks are due to Mr. J. H. Scott, Demonstrator of Anatomy, for the accurate water-colour drawing which he executed of the Great-Grimsby Dolphin. It is from it that the accompanying figure (Plate LXIV. fig. 1) is taken.

13. Notes on a Dolphin taken off the Coast of Norfolk.

By J. W. CLARK, M.A., F.Z.S.

[Received June 20, 1876.]

(Plate LXIV. fig. 2 & Plate LXV.)

On the 26th of March in the present year a large Porpoise was caught by some fishermen off Lowestoft. It was fortunately secured for me on the same day, and despatched to Cambridge. The men who captured it called it a White-beaked Bottlenose.

The animal was a male, and, as was discovered afterwards by the condition of the bones, quite young. The weight was 139 pounds.